

## GEOGRAPHY

### **K2-18b: Potentially Habitable Planet**

Scientists have found signatures of water vapour in the atmosphere of K2-18b.

- K2-18b is the only planet orbiting a star outside the Solar System (exoplanet) that is known to have both water and temperatures that could support life.
- However, K2-18b's size and surface gravity are much larger than Earth's. Its radiation environment, too, maybe hostile.
- K2-18b orbits the cool dwarf star K2-18, which is about 110 light-years from Earth in the Leo constellation.
- It is eight times the mass of Earth. It was discovered in 2015 by NASA's Kepler spacecraft.
- It resides in a habitable zone or Goldilocks zone, the area around a star where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets.
  - The size of the habitable zone clearly depends on the luminosity of the star, which determines the equilibrium temperature of the planet.
  - For low-mass, cool stars, the region is closer to the star, and for higher mass, hotter stars, the region is more distant from the star.

## GOVERNANCE- WELFARE SCHEMES, E-GOVERNANCE, SERVICES ETC.

### **Initiatives of MIC And AICTE To Boost Research And Innovation In The Country**

Union Human Resource Development (HRD) Minister launched several initiatives of MIC and AICTE to boost research and innovation in the country.

#### **About:**

Union HRD Minister attended the First Annual Innovation Festival of the MHRD's Innovation Cell (MIC). MIC organized the first Annual Innovation Festival in coordination with AICTE. In 2018, the MHRD, initiated the separate Innovation cell with support from AICTE to foster the culture of innovation in all educational institutions of India.

#### **Initiatives Launched:**

- Launch of Institution's Innovation Council (IIC) 2.0 from July 2019 – June 2020: MHRD's Innovation Cell has envisioned establishing a strong network of Institution's Innovation Council (IICs) in Higher Educational Institutes to promote innovation and start-up in academia.
- Launch of Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020: ARIIA is an initiative of Ministry of Human Resource Development (MHRD) to systematically rank all major educational institutions and universities on indicators related to promotion of "Innovation and Entrepreneurship Development" amongst their students and faculties.
- Release of guidelines on 'National Innovation and Start-up Policy 2019' for students and faculty of all higher education institutions in India who are keen to become entrepreneurs.
- Launch of Smart India Hackathon 2020 (SIH2020): Smart India Hackathon is a flagship program and nationwide initiative by MHRD's Innovation Cell (MIC) and AICTE to provide students a platform to solve some of the pressing problems we face in our daily lives.
- Announcement of new ATAL ACADEMIES: It is proposed to set up 10 (ten) more AICTE Training And Learning (ATAL) Academies/Centres (apart from existing 4).
- Launch of Protsahan Mudra Scheme: Protsahan Mudra is real time rewards Engine to give rewards to Students and teachers daily or as close to the action that qualifies for the reward.
- Announcement of AICTE – VISHWAKARMA AWARDS' 2019: AICTE has introduced Vishwakarma Awards from 2017 to encourage and motivate young students and institutions to raise their performance in their specific domains. Theme of Vishwakarma Award 2019 is "How to enhance the income of Village".

### **Indian Institute Of Skills, Mumbai**

Union Minister for Skill Development and Entrepreneurship (MSDE) laid the foundation stone of Indian Institute of Skills (IIS) at Mumbai.

#### **Background:**

The Union Cabinet had given its nod to set up Indian Institute of Skills (IISs) in three cities — Mumbai, Ahmedabad and Kanpur — to give boost to the Skill India Mission.

These institutes will be constructed and operated on a PPP (Public-Private Partnership) model and on a not-for-profit basis.

**Indian Institute Of Skills, Mumbai:**

- The IIS will be a tertiary care institute in the skills ecosystem to offer courses in emerging and high demand areas. This institute will be on the lines of the Institutes of Eminence including IITs and IIMs.
- The objective of the institute is to provide skill training in highly-specialised areas such as deep technology, aerospace, among others to students who want to pursue technical education after completing Class X and XII.
- Tata Education Development Trust (TEDT) was selected as the private partner for setting up IIS at NSTI campus in Mumbai through a competitive bidding process. The aim of the Institute is to ensure that 5000 trainees will be passing out every year with 70% placement opportunities.

**National Pension Scheme for Traders and Self Employed Persons**

PM has launched the National Pension Scheme for Traders and Self Employed Persons, a pension scheme for the Vyaparis (shopkeepers/retail traders and self-employed persons),

**About the Scheme**

- It is a voluntary and contributory pension scheme for entry age of 18 to 40 years with a provision for minimum assured pension of Rs 3,000/- monthly on attaining the age of 60 years.
- The eligible Vyaparis can visit their nearest CSCs and get enrolled under the scheme. In addition people can also self-enroll by visiting its portal.
- At the time of enrollment, the beneficiary is required to have an Aadhaar card and a saving bank/ Jan-dhan Account passbook only.
- He/ She should be within 18 to 40 years of age group. GSTIN is required only for those with turnover above Rs. 40 lakhs.
- The enrolment under the scheme is free of cost for the beneficiaries. The enrolment is based upon self-certification.
- An estimated 3 crore Vyaparis in the country are expected to be benefitted under the pension scheme.

**Eligibility Criteria**

- Vyaparis with annual turnover not exceeding Rs 1.5 crore are eligible for the pension.
- The beneficiary should not be income tax payer and also not a member of EPFO/ESIC/NPS (Govt.)/PM-SYM.
- The Central Government shall give 50 % share of the monthly contribution and remaining 50% contribution shall be made by the beneficiary.
- The monthly contribution is kept low to make it affordable. For example, a beneficiary is required to contribute as little as Rs.100/- per month at a median entry age of 29 years.

**ENVIRONMENT- CONSERVATION, BIO-DIVERSITY AND ISSUES****Drought Toolbox**

Drought Toolbox was officially launched during the 14th Conference of Parties (COP14) to United Nations Convention to Combat Desertification (UNCCD) held at Greater Noida, India.

**About:**

- The Drought Toolbox can be used by countries to assess drought risks in their regions much in advance. It can accurately evaluate the vulnerability of different geographic regions to drought.
- It will also suggest means to mitigate the adverse impact of acute water scarcity.
- The toolbox uses 30 parameters, including soil moisture, rainfall data and temperature data of the present and past.
- The framework for the toolkit includes three key aspects: (1) 'Monitoring and Early Warning' system, (2) 'Vulnerability and Risk Assessment' and (3) 'Risk Mitigation Measures'.

**Background:**

- Few years ago, many countries suggested that the UNCCD come up with a tool to forecast droughts and minimise their socio-economic impact.
- Subsequently, UNCCD experts began working on the drought toolbox together with other UN organisations such as the FAO and World Meteorological Organization (WMO), as well as from the University of Nebraska in the US.

**Related Info :**

- In India, the Ministry of Agriculture is the nodal ministry in respect of monitoring and managing drought conditions and droughts are classified into meteorological droughts, hydrological droughts and agricultural droughts.

- According to a World Bank study, droughts, which are normally difficult to foresee are four times costlier than floods.
- According to UNCCD, the economic impact of drought is more than \$80 billion a year. Droughts have caused loss of foodgrains that can feed as many as 81 million people every day.

#### **A case for a differential global carbon tax**

Climate change is a global problem, and a global problem needs a global solution.

#### **Background**

- The most recent IPCC report suggests that we might have just over a decade left to limit global warming.
- It says total global emissions will need to fall by 45% from 2010 levels by 2030 and reach net zero by 2050.
- If these targets are not met, tropical regions of the world, which are densely populated in the global South are likely to be most negatively affected because of their low altitudes and pre-existing high temperatures.
- Some impact of this was already felt during the Tamil Nadu water crisis this year.

#### **Sharing the burden**

- The global South has historically contributed less to the problem and even at present its per capita carbon emissions are much smaller in comparison to the countries in the global North.
- But they happen to be at the receiving end of the lifestyle choices made by the global North.
- Though time is running out, a genuine global consensus on the mitigation of this problem is missing.
- In the absence of a collective agreement, the environment is becoming a casualty.
- Both worlds need to contribute to averting this danger in their self-interest.
- The burden of adjustment cannot be equal when the underlying relationship between the two worlds has been historically unequal.
- A just approach would involve a global sharing of responsibility among countries according to their respective shares in global emissions.
- Currently, the most accepted model of mitigating strategy has been the carbon trading process. It has its own limitations.

#### **A new burden-sharing model – Just Energy Transition (JET)**

- It is premised on a sense of global justice in terms of climatic fallouts and the respective contributions of the countries.
- It will also help the resource-poor developing countries to make the energy transition without having to worry about finances unduly.

#### **A new way for Climate Financing**

- Fundamentally change the energy infrastructure. It requires massive investments for the green energy program across the world.
- Financing
  - On the top of the funnel, apart from funding their own energy transition, countries should partially support the transition for the countries at the bottom.
  - This sharing of the burden of development should be done in a way that inverts this injustice funnel.
  - Countries have to spend around 1.5% of their GDP.
- Global energy transition should be financed through a system of the global carbon tax. Total global carbon emissions are 36.1 billion metric tonnes of CO<sub>2</sub>. This amounts to a global carbon tax of \$46.1 per metric tonne.
- Those at the receiving end of climate injustice are duly compensated for even as the entire world transitions to greener earth as a result of this process of carbon tax sharing.
- Currently, the global average of carbon emissions is 4.97 metric tonne per capita. All the countries with emissions above this level are “payers” to finance energy transition for ‘beneficiary’ countries which are emitting below this level.
- The total amount of “carbon compensation” made by the payer nations comes to around \$570 billion. The distribution of this amount across the payer countries is based on their distance from the global average.

- Compensated countries and the distribution of this fund across them is also based on how to lower their emissions are in comparison to the global average.
- Once you add (subtract) the carbon compensation amount to (from) each of the countries, you get the effective carbon tax for them.
- The two top 'payer' countries in terms of absolute amounts of transfers are the U.S. and China since their emissions are higher than the global average.
- The effective tax rate for the Chinese is lower than the possible universal tax rate of \$46.1 per metric tonne and that's because their own energy transition (1.5% of China's GDP) plus the global compensation they make requires a tax rate only of \$34.4 per metric tonne.
- The burden of adjustment is only partially falling on their shoulders and only because they emit more than the global average.

#### Robin Hood Tax

- In terms of 'compensated' countries, India comes at the top due to its population size and its distance from the global emissions' average. India has per capita emissions of 1.73 metric tonnes.
- Countries like France, Sweden, and Switzerland are also in the compensated list. Even high-income countries that have currently kept their per capita emissions low are beneficiaries of this globally-just policy.

Conclusion It wants all nations to climb down the emissions ladder without necessarily having to give up on their standard of living. It's a global green Robin Hood tax!

### **DEFENCE**

#### Exercise MAITREE

Indian Army and Royal Thailand Army (RTA) will conduct their joint Military Exercise MAITREE-2019 at Meghalaya from Sept 16-29, 2019.

- Exercise MAITREE is an annual training event that is conducted in India and Thailand alternatively, since 2006.
- In the backdrop of changing facets of global terrorism, this exercise is a significant exercise for both the nations as they face the security challenges from terrorism.
  - The Southern regions of Thailand (eg. Satun city, Patthalung province, Bangkok, etc) that are mostly visited by foreigners are prone to terrorist attacks.
- The scope of this exercise covers company level joint training on insurgency & counter-terrorism operations in jungles and urban scenarios.
- The joint military exercise between the Indian Army (IA) and the Royal Thailand Army (RTA) will give a boost to the defence cooperation and bilateral relations between the two nations.
- The Royal Thailand Navy and the Indian Navy have been participating in Coordinated Patrols (CORPATs) in the Indian Ocean region since 2005

#### Samudra Laksamana

The Indian Navy and the Royal Malaysian Navy will be participating in the bilateral exercise 'Samudra Laksamana' that will take place from 12th to 15th September 2019.

The exercise includes two phases:

- A harbour phase wherein professional interactions, official calls, social engagements, visits by the local populace and various sports events would be conducted.
- The Sea Phase of the exercise would enable the two navies to further sharpen their skills in order to enhance interoperability between the navies to ensure peaceful and secure seas for all.
- From the Indian side, Indian Navy Ships Sahyadri and Kiltan will participate in the exercise.
- The visit of the IN ships would further bolster the strong bonds of friendship between the two countries and contribute to the security and stability in the region.

### **QUOTE OF THE DAY**

**When one door of happiness closes, another opens, but often we look so long at the closed door that we do not see the one that has been opened for us.**

## **DAILY ANSWER WRITING PRACTICE**

**Qns.** Is carbon tax regressive in nature? Give reasons to justify your answer.

**Ans**

A carbon tax is a levy imposed on the burning of carbon-based fuels (coal, oil, gas) for reducing and eventually eliminating the use of fossil fuels whose combustion is destabilizing and destroying climate. It is a powerful monetary disincentive that motivates transition to clean energy across the economy, simply by making it more economically rewarding to move to non-carbon fuels and energy efficiency.

Carbon tax as non regressive:

- Skewed consumption pattern: India's carbon emissions in 2014 were more than three times its level in 1990. While the emissions have increased sharply, their distribution across income groups is extremely skewed. The poor in India who contribute the least to climate change face the maximum brunt. Thus implementation of carbon tax and utilizing the proceeds for pollution control and augmenting health budget is a rational way forward.
- Reducing demand: By taxing carbon, revenue thus generated can be used for a systematic overhaul of the energy mix in the economy, carbon taxes address demand side of carbon based energy resources i.e. reducing it ( by increasing prices of carbon-intensive products).
- Health cost of pollution: By reducing carbon emission through taxing there are immense health benefits. A significant part of more than 3 % percent of India's GDP currently spent on pollution-induced diseases will inevitably come down and this cost is heavily borne by poor.
- Climate finance: When it comes to mitigation of climate change the global North has to shoulder a higher burden of adjustment both because of their past and current contributions as well as their greater access to funds. Carbon tax in these nations can help to fund climate financing thus ensuring climate justice and equity.
- Subsidizing renewable energy sources through cross subsidization from carbon tax can help in dealing with climate change by promoting solar energy, wind energy, cleaner biofuels etc.

Conclusion

- Thus, Carbon tax apparently gives impression of being a regressive tax; however by implementing it in conjunction with broader health and energy policy, it can help in redistribution and helping poor to ward off the negative impact of climate change.
- At the same time Carbon tax will help in achievement of goals under Paris Agreement to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees celsius above pre-industrial levels.

**DAILY CURRENT AFFAIRS MCQ**

1. Sometimes seen in the news, K2-18 is what kind of a celestial body?

(a) Exoplanet  
(b) **Dwarf Star**  
(c) Comet  
(d) Satellite

2. Which of the following are the initiatives launched by MHRD's Innovation Cell (MIC) and AICTE to boost research and innovation in the country?

1. Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020.  
2. Smart India Hackathon 2020 (SIH2020).  
3. Protsahan Mudra Scheme.

Select the correct answer using the code given below:

(a) 1 only  
(b) 1 and 2 only  
(c) 2 and 3 only  
(d) **1, 2 and 3**

3. With reference to the Drought Toolbox, consider the following statements:

1. Drought Toolbox was officially launched during the 14th Conference of Parties (COP14) to United Nations Convention to Combat Desertification (UNCCD).  
2. In India, the Ministry of Water Resources is the nodal ministry in respect of monitoring and managing drought conditions.

Which of the statements given above is/are correct?

(a) **1 only**  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2

4. With reference to the Indian Institute of Skills (IIS), consider the following statements:

1. The Union Cabinet had recently given its nod to set up Indian Institute of Skills (IISs) in three cities — Mumbai, Ahmedabad and Kanpur — to give boost to the Skill India Mission.  
2. These institutes will be constructed and operated on a PPP (Public-

Private Partnership) model and on a not-for-profit basis.

Which of the statements given above is/are correct?

(a) 1 only  
(b) 2 only  
(c) **Both 1 and 2**  
(d) Neither 1 nor 2

5. Consider the following statements:

1. MAITREE is a joint Military Exercise conducted between the Indian Army and the Sri Lankan army.  
2. Samudra Laksamana is joint naval exercise conducted between India and Indonesia.

Which of the statements given above is/are correct?

(a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) **Neither 1 nor 2**

6. Samudra Laksamana is a Naval Exercise of India with which country?

(a) Indonesia  
(b) **Malaysia**  
(c) Maldives  
(d) Singapore